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Red Arrow Products Co. LLC  
Post Office Box 1537  
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Manitowoc, WI 54221-1537

PH: 920-683-5500  
FAX: 920-683-5524

November 16, 1998

Mr. Tom Katen  
Cooper Foods, Inc.  
6793 U.S. Rte. 127 North  
Van Wert, OH 45891

Dear Tom:

Thank you for your hospitality during my visit last week. We had quite a few projects to tackle and I felt we had very good success. The following pages are test procedures and recommendations for the atomization, collagen turkey breast, apple flavored turkey breast, and MAILLOSE and the high temperature oven.

For easy reviewal I have taken one page each to follow up on the aforementioned items. I will be in touch soon to discuss moving forward on these items. In the meantime, please do not hesitate to call with questions.

Sincerely,  
Red Arrow Products Co. LLC

A handwritten signature in black ink that reads "B.C. Hickman".

Brian C. Hickman  
Territory Sales Manager

cc: Eric Ludwig

A large, stylized, textured logo where the letters 'RED ARROW' are formed by a series of overlapping, irregular shapes resembling a spray or a burst of energy.

PTO-004212

## ATOMIZATION and SUPREME POLY

The portable atomization unit is in reasonably good shape. Several worn o-rings and gaskets on the pressure tank were replaced, as well as several of the quick disconnects that also were showing noticeable wear. All of the quick disconnect parts should be replaced with new ones, which will help improve the flow of atomized products.

The reason the nozzle clogs up is probably due to mixing MAILLOSE and SUPREME in the lines. The SUPREME is not water soluble and will get very cloudy and could have tar formation when in contact with another water based substance. The simplest recommendation I have would be to utilize SUPREME POLY which contains poly-sorbate 80 to make it water soluble. I will be sending a sample to you for tests.

The SUPREME POLY will also be required should you decide to do all of your re-smoking in the high temperature oven.

Once the new oven doors are installed in the backs of the large smoke houses the atomization nozzle will need to be re-installed in a more suitable area. With the installation of a new house to west of the existing houses the nozzle will probably have to be installed from the smoke house ceiling with stainless steel tubing dropped down to properly position the nozzle in place. Then, poly-flo lines could be dropped from the ceiling and secured down the front of the house to make the connection with the portable unit simple. Another idea would be to purchase a wall mounted single panel atomization unit which, once installed, would not have to be moved or hooked up for use.

## Honey Cured Smoked Turkey - Collagen

We ran a test of this product to get a golden brown color to the product. The following is the test procedure that was run and following it is a recommendation of how to run it in the future to shorten the cycle and use less steps:

TIME	DRY/WET BULB	FA/EX DAMPER	HUMIDITY VALVE	COMMENTS
30 min	125/125	Closed	Auto	
20 min	150/0	Auto	Closed	Dry surface, but only 90F temp
15 min	150/110	Auto	Auto	Tacky, but only 102F temp
10 min	150/0	Auto	Closed	Tacky, about 105F
20 min	0/0	Closed	Closed	Atomization 2.75# of Supreme 3min dwell
40 min	170/112	Auto	Auto	
30 min	180/142	Auto	Auto	
120 min	180/153	Auto	Auto	
180 min	180/160	Auto	Auto	
30 min	180/164	Auto	Auto	To 160F internal
5 min	180/180	Closed	Auto	

The adjustments made during the period when the dry bulb was set at 150F were to ensure proper surface conditions prior to moving on in the processing schedule. The results were quite positive, but the following will be more simple and efficient to run:

TIME	DRY/WET BULB	FA/EX DAMPER	HUMIDITY VALVE	COMMENTS
?	125/125	Closed	Auto	To 102F surface temp
?	150/0	Auto	Auto	To tacky surface
20 min	0/0	Closed	Closed	Atomize 2.75# Supreme 3 minute dwell
40 min	170/112	Auto	Auto	
30 min	180/142	Auto	Auto	
120 min	180/153	Auto	Auto	
to internal	180/164	Auto	Auto	
5 min	180/180	Closed	Auto	

The time on the first two steps will be determined during the first run. However, it is important to assure certain conditions before moving to the next step in a processing schedule. This is especially true before atomization of a liquid smoke.

## Apple Flavored Smoked Turkey

In the high temperature oven we tested several turkey pieces and **LFB SPECIAL A w/apple**. This was an excellent application as the surface temperature did not rise high enough to flash off the apple flavor we were trying to achieve.

The first test piece was dipped in **LFB SPECIAL A w/apple** for one minute and placed in the oven for two runs of four minutes at about 250F. The first run through the top browned very nicely, but the bottom did not. On the second run the product was placed in the oven upside down to brown the bottom portion, which it did. The apple flavor was distinctive.

Another piece was then dipped again for one minute and placed onto the conveyor for 8 minutes at 300F. The color was very brown on the top, but noticeably lighter on the bottom.

The last test was done by dipping one piece for one minute and another for two minutes. Both pieces were placed in the oven at 350F for 8 minutes. Both products browned nicely even on the bottom. These were the products to be sent to the customer for evaluation. The apple aroma was very evident especially on the piece that was drenched for two minutes.

The contact time of the **LFB SPECIAL A w/apple** was sufficient to provide enough penetration into the product surface. Because the high temperature oven only raises the surface temperature to roughly 125F there is no flashing off the apple flavor. Therefore, higher temperatures and less oven time could be tested and should produce superior results.

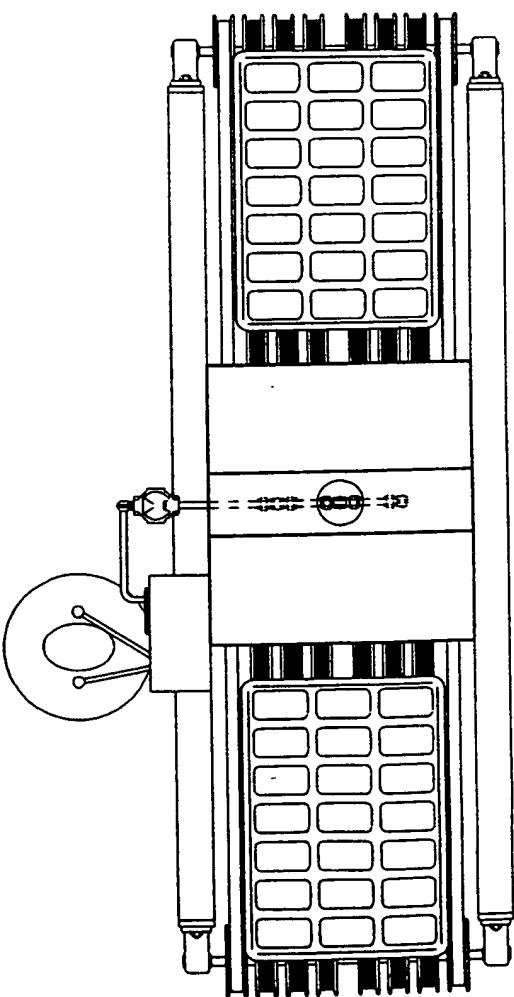
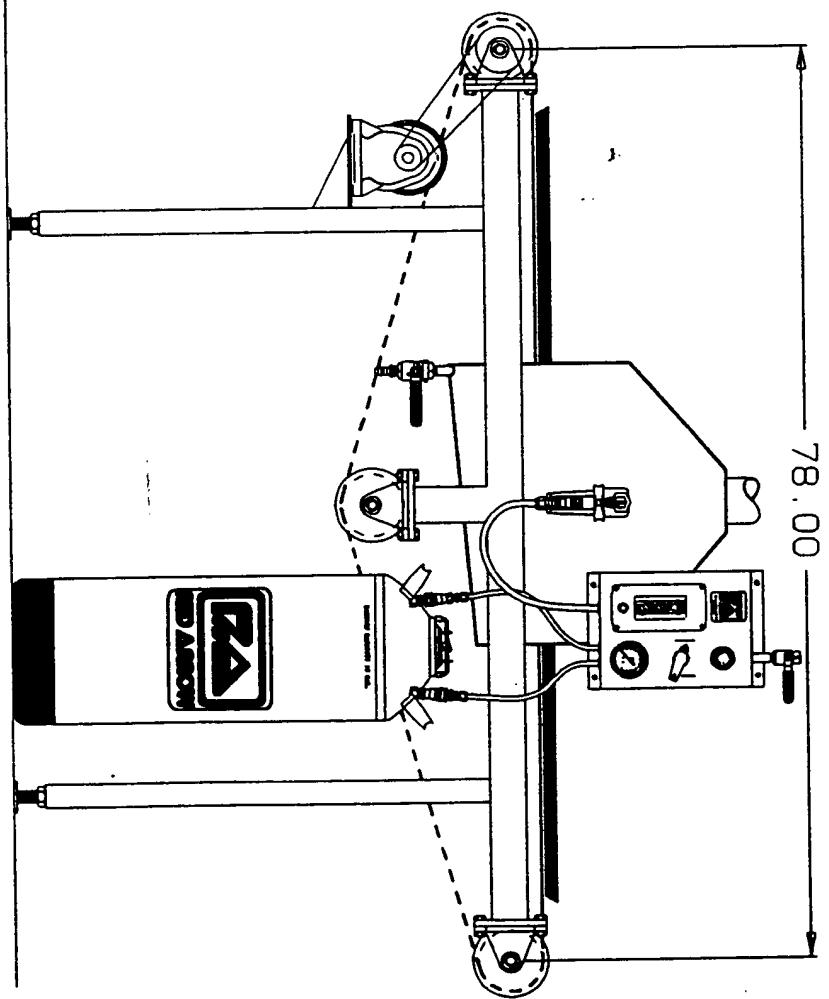
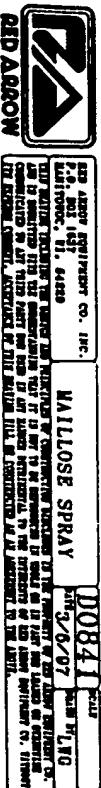
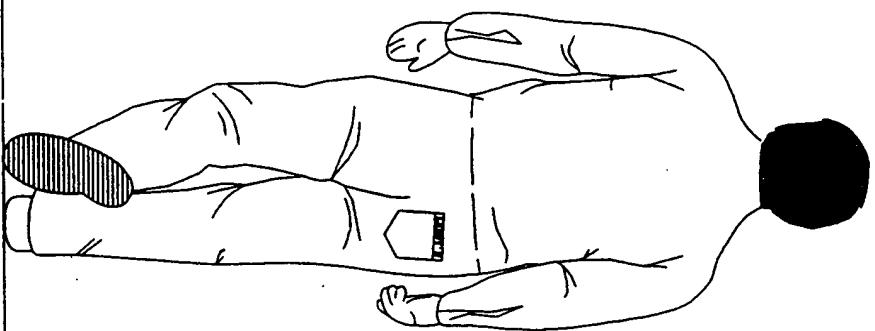
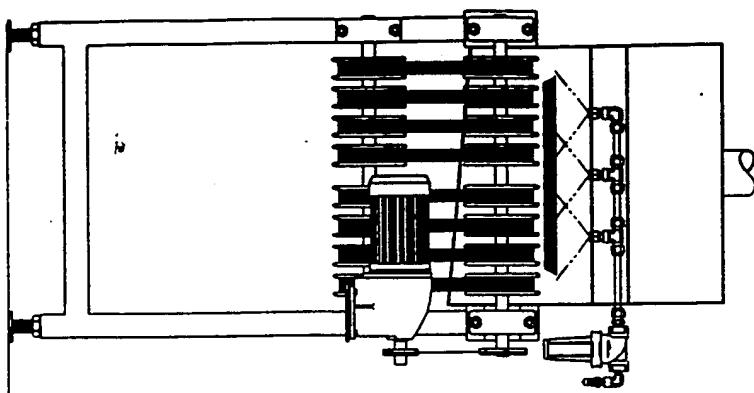
The product can be labeled "Smoked" and a qualifier could read "Apple Flavor Added" or "Apple Flavored". However, the product can not be labeled "Naturally Smoked" or "Applewood Smoked" or any combination thereof. A possible idea would be to call the product "Apple Flavored Smoked Turkey Breast".

It also must be noted that the product is not Kosher because of the type of apple flavoring we use. If this will be an issue please let me know we can try to source one that is Kosher.

## **MAILLOSE and IMPINGEMENT**

The high temperature oven that is now in place is very impressive. Following a few adjustments the products had very good color. Dipping the products in full strength MAILLOSE will be your best option until we can implement an application system. A low volume spray bar applicator with a protective hood is the best recommendation. We can custom design one with or without a conveyor, and to best suit your needs. A system like this would enable you to cover every piece with a consistent amount of MAILLOSE to ensure consistent browning throughout the re-smoking process.

When the time is right for you I would recommend getting in touch with Luke Griesbach of our equipment company to discuss specifics. His extension is x125. I have also enclosed a drawing of a spray system that would be most suitable for your needs. The length and width of the system can be varied and the conveyor speed adjusted for adequate product flow prior to heat processing.



PTO-004217

# KRETCHMAR HONEY HAM TEST @ UNITHERM

5/26/99

TEST	% PUMP	INFRA RED	OVEN TEMPS	
			ZONE - 1	ZONE - 2
1A	34%	YES	550°	600°
1B	34%	NO	550°	600°
2A	30%	YES	550°	600°
2B	30%	NO	550°	600°
3A	28%	YES	550°	600°
3B	28%	NO	550°	600°
CA	48%	YES	550°	600°
CB	48%	NO	550°	600°

TEST	% PUMP	SMOKE SHOWER	INFRA RED	OVEN TEMPS		SHOWER SIDE UP
				ZONE - 1	ZONE - 2	
1D	34%	1 MINUTE	1 MINUTE	550°	600°	
1E	34%	1 MINUTE	1 MINUTE	550°	615°	
2E	30%	1 MINUTE	YES	550°	615°	
2E 1			1 MINUTE	550°	615°	SHOWER SIDE UP
2E 2			1 MINUTE	550°	615°	SHOWER SIDE UP
2E 3			1 MINUTE	550°	615°	SHOWER SIDE DOWN
2E 4			1 MINUTE	550°	615°	SHOWER SIDE DOWN
2E 5			1 MINUTE	550°	615°	SHOWER SIDE UP
2E 6			1 MINUTE	550°	615°	SHOWER SIDE UP
2E 7			1 MINUTE	550°	615°	SHOWER SIDE UP
2E 8			1 MINUTE	550°	615°	SHOWER SIDE UP
3E	28%	1 MINUTE	YES	550°	615°	
3E 2			45 SECONDS	550°	615°	SHOWER SIDE UP
3E 3			45 SECONDS	550°	615°	SHOWER SIDE UP
3E 4			45 SECONDS	550°	615°	SHOWER SIDE UP
3E 5			45 SECONDS	550°	615°	SHOWER SIDE UP
3E 6			45 SECONDS	550°	615°	SHOWER SIDE DOWN
3E 7			45 SECONDS	550°	615°	SHOWER SIDE DOWN
3E 8			45 SECONDS	550°	615°	SHOWER SIDE DOWN

## NOTES

THE LIQUID SMOKE USED WAS RED ARROW 24P APPLIED @ 50% ON ALL TESTS

THE DWELL TIME IN OVEN WAS 10 MINUTES ON ALL TESTS

INFRARED GRILL TEMPERATURE IS 1200°

ALL RAPID FLOW OVENS HAVE STEAM SUPPLY AND FIRE SUPPRESSION SYSTEM  
GRILL & OVEN USE 400psi BELT WASH SYSTEMS

PTO-004218

**TEST YIELDS FROM RAPID FLOW OVEN**

TEST CONDUCTED ON 5/26/99 @ UNITHERM

TEST #	PUMP	LBS IN BAG	LBS OUT OF IR	LBS OUT OF OVEN	YIELD
1	34%	13.6	12.94	12.58	92.50%
1B	34%	13.39	NO IR	12.47	93.13%
2	30%	13.26	12.73	12.45	93.89%
2B	30%	13.53	NO IR	12.88	95.20%
3	28%	14.25	13.64	13.31	93.40%
3B	28%	14.01	NO IR	12.9	92.08%

**TEST LOT 2 30% PUMP**

PEELED WEIGHT	LBS AFTER IR & OVEN	YIELD	LBS AFTER BLAST CHILL	YIELD
12.975	12.555	96.76%	12.51	96.42%
12.98	12.565	96.80%	12.495	96.26%
13.125	12.7	96.76%	12.635	96.27%
12.81	12.395	96.76%	12.355	96.45%
12.85	12.45	96.89%	12.365	96.23%

**TEST LOT 3 28% PUMP**

OVEN TEMP	ZONE 1	ZONE 2	
TIME IN OVEN (minutes)			550°
TIME IN IR (minutes)			600°
SMOKE SOLUTION	24P	50%	1

OVEN TEMP	ZONE 1	ZONE 2	
TIME IN OVEN (minutes)			615°
TIME IN IR (minutes)			10
SMOKE SOLUTION	24P	50%	0.75

1. TIME & TEMP NECESSARY TO ACHIEVE DESIRED PRODUCT APPEARANCE

→ 2. CLEANING PROCESS

1-1/2 hrs  
Alkaline

- 2.1. CIP TYPE SYSTEM
- 2.2. HOW LONG TO CLEAN SYSTEM
- 2.3. CLEANING DUCTWORK
- 2.4. RECOMMENDED CHEMICALS
- 2.5. DEGREE OF DIFFICULTY IN CLEANING CONVEYOR

2.5.1.1. ARE BRUSHES USED

3. WHAT IS NECESSARY TO PROVIDE TEMPERATURE BEYOND THAT OF SUPERHEATED STEAM

4. STEAM USAGE FOR OVEN

5. AMMONIA USAGE FOR CHILLER

6. ELECTRICAL USAGE FOR OVEN & CHILLER

7. SUGGESTED MANNING

8. DOES PRODUCT NEED TO BE PREHEATED OR SURFACE DRIED BEFORE APPLYING LIQUID SMOKE

9. WHAT IMPACT DOES CHILLER HAVE ON INTERNAL TEMPERATURES OF PRODUCT

10. BRINE CHILLING PRIOR TO OVEN  $\Delta \approx 600,000$

11. INTERNAL TEMP GOING INTO & OUT OF OVEN

12. FPM OF CHAIN THROUGH OVEN & LENGTH OF CHAIN  $2FPM$

13. WILL BLAST CHILL KEEP UP WITH OVEN

14. BAG SLITTER - CAPACITY & COST

15. FOOT BATHS/BOOTWASHERS - DETAILS & COST

16. STAINLESS STEEL FLOOR DRAINS

Pieces per hour 384

Adjustable Air flow - Is oven capable of running other products

129°-140°

Brine Chiller  $L \times W \times H = 21 \times 21 \times 10$  : 400 pcs/hr

400' across belt  
400' long belt x 40" wide

Send Honey Ham to Unitham

KRETCHMAR HAM MANNING  
CURRENT MANNING

DEFORM		PCS/HR	818	5/20/99
PLACE ON RACK	1	PCS/MAN/HR	102.2	
LAYUP	2	MAN/HRS/100PCS	0.978	
DEFORM	2	LBS/HR	8586	
WASH FORM	2	LBS/MAN/HR	1073	
MULE	1	MAN/HRS/CWT	0.093	
	8			

AVG PIECE WEIGHT

10.5

128 PCS @23:42 MIN = 563.5 SECONDS  
HAMS PER MINUTE 13.6

PEEL		PCS/HR	940.4	5/20/99
LAYUP	1	PCS/MAN/HR	166.1	
PEELERS	2	MAN/HRS/100PCS	0.802	
HANG	2	LBS/HR	9874	
SCALE	0.33	LBS/MAN/HR	1745	
MULE	0.33	MAN/HRS/CWT	0.057	
	5.66			

384 PIECES IN 24.5 MINUTES

15.7 PCS/MIN

PACKAGING - WEST LINE		PCS/HR	903	5/20/99
LAYUP	1	PCS/MAN/HR	129	
BAG	1	MAN/HRS/100PCS	0.775	
CRY-O-VAC	1	LBS/HR	9488	
LABEL	1	LBS/MAN/HR	1355	
MAKE/PACK BOXES	2	MAN/HRS/CWT	0.074	
PALLETIZE	1			
	7			

PCS	TIME (SEC)
20	63
20	79
20	83.5
20	85
20	88
100	398.8

SEC/PC 3.99  
PCSMIN 15

STUFFING		PCS/HR	629	6/3/99
STUFFER	1	PCS/MAN/HR	105	
PAPER MOLD	1	MAN/HRS/100PCS	0.954	
LID	1	LBS/HR	6802	
CLAMP LID	1	LBS/MAN/HR	1100	
MULE	1	MAN/HRS/CWT	0.091	
COOKER	1			
	6			

PCS	TIME (SEC)	PCSMIN	PCS/HR
25	123.81	4.94	12.13
40	193.15	4.83	12.43
65	351.93	5.41	11.08
125	797.12	8.33	9.48
250	1445.81	8.38	569.05

SEC/PC 5.73  
PCSMIN 10.48

SUM OF MAN/HRS/100 PCS	26.66	53309
SUM OF MAN/HRS/CWT		~0.3462

DEFORM		PCS/HR	705	6/3/99
PLACE ON RACK	1	PCS/MAN/HR	100.8	
LAYUP	1	MAN/HRS/100PCS	0.992	
DEFORM	2	LBS/HR	7406	
WASH FORM	2	LBS/MAN/HR	1058	
MULE	1	MAN/HRS/CWT	0.095	
	7			

PCS	TIME (SEC)	PCSMIN	PCS/HR
42	219.7	5.23	11.47
84	444.0	5.29	11.35
126	656.8	5.21	11.51
168	874.2	5.20	11.53
42	193.5	4.61	13.02
84	417.3	4.97	12.08
126	608.4	4.83	12.43
168	873.5	5.20	11.54
840	4287.47	8.07	692.37

SEC/PC 5.10  
PCSMIN 11.76

PTO-004221

## TEST YIELDS FROM RAPID FLOW OVEN

TEST CONDUCTED ON 6/26/99 @ UNITHERM

TEST #	PUMP	LBS IN BAG	LBS OUT OF IR	% LOSS	LBS OUT OF OVEN	% LOSS	TOTAL % LOSS
1	34%	13.6	12.94	4.85%	12.58	2.78%	7.50%
1B	34%	13.39	NO IR		12.47		6.87%
2	30%	13.26	12.73	4.00%	12.45	2.20%	6.11%
2B	30%	13.53	NO IR		12.88		4.80%
3	28%	14.25	13.64	4.28%	13.31	2.42%	6.60%
3B	28%	14.01	NO IR		12.9		7.82%
							17.1

## TEST LOT 2 30% PUMP

LBS OUT OF BAG	LBS AFTER IR & OVEN	% LOSS	LBS AFTER BLAST CHILL	% LOSS	TOTAL % LOSS
12.975	12.555	3.24%	12.51	0.38%	3.58%
12.98	12.585	3.20%	12.495	0.56%	3.74%
13.125	12.7	3.24%	12.635	0.51%	3.73%
12.81	12.395	3.24%	12.355	0.32%	3.55%
12.85	12.45	3.11%	12.365	0.68%	3.77%
TOTAL	84.74	82.665	3.21%	82.36	0.49%
					3.68%

## TEST LOT 2 PFF

PFF	OVEN TEMP	ZONE 1	550°
	TIME IN OVEN (minutes)	ZONE 2	600°
	TIME IN IR (minutes)		1
	SMOKE SOLUTION	24P	50%
	MINUTES FROM PEEL TO OUT OF OVEN		18.5

LBS OUT OF BAG	LBS AFTER IR & OVEN	% LOSS	LBS AFTER BLAST CHILL	% LOSS	TOTAL % LOSS
12.93	12.465	3.60%	12.445	0.16%	3.75%
13.37	12.925	3.33%	12.88	0.35%	3.66%
TOTAL	26.3	25.39	3.46%	25.325	0.26%
					3.71%

## TEST LOT 3 PFF

PFF	OVEN TEMP	ZONE 1	550°
	TIME IN OVEN (minutes)	ZONE 2	615°
	TIME IN IR (minutes)		1
	SMOKE SOLUTION	24P	50%
	MINUTES FROM PEEL TO OUT OF OVEN		18.25

IR REFERS TO INFRARED OVEN

PTO-004222

## YIELD SAVINGS

			CURRENT METHOD	PROPOSED METHOD
			48% PICKLE	32% PICKLE
\$55.00	20/26 MARKET	CUSHION	1000	1000
\$4.00	GEOGRAPHIC	PICKLE	480	320
<b>\$59.00</b>		BINDER	150	150
\$11.00	CREDITS	DEXTROSE	30	30
<b>\$48.00</b>		HONEY	75	75
47.0%	BONING YIELD			
<b>\$102.13</b>		PUMP %	38.65%	31.97%
\$30.00	CUSHION MARK-UP			
<b>\$132.13</b>				
\$112.31	85% CUSHION @ \$132.13	MEAT COST	<b>\$120.71</b>	<b>\$120.71</b>
\$8.40	15% BINDER @ \$56.00	PUMPED COST	\$87.06	\$91.47
<b>\$120.71</b>	MEAT COST	SHRINK YIELD	78.5%	88.5%
		YMC	<b>\$110.91</b>	<b>\$103.35</b>
		SAVINGS/CWT		\$7.55
		ANNUAL SALES		5,600,000
		ANNUAL SAVINGS		<b>\$42,635</b>

KRETCHMAR HAM MANNING  
CURRENT MANNING

5/20/99  
5/20/00

DEFORM		PCS/HR	818
PLACE ON RACK.	1	PCS/MAN/HR	102.2
LAYUP	2	MAN/HRS/100PCS	0.978
DEFORM	2		
WASH FORM	2		
MULE	1		
	8		

128 PCS 9:23:42 MIN = 563.5 SECONDS  
HAMS PER MINUTE 13.6

PEEL		PCS/HR	940.4
LAYUP	1	PCS/MAN/HR	166.1
PEELERS	2	MAN/HRS/100PCS	0.602
HANG	2		
SCALE	0.33		
MULE	0.33		
	5.66		

384 PIECES IN 24.5 MINUTES  
15.7 PCS/MIN

PACKAGING - WEST LINE		PCS/HR	903
LAYUP	1	PCS/MAN/HR	129
BAG	1	MAN/HRS/100PCS	0.775
CRY-O-VAC	1		
LABEL	1		
MAKE/PACK BOXES	2		
PALLETIZE	1		
	7		

PCS	TIME (SEC)
20	63
20	79
20	83.5
20	85
20	88
100	398.5

SEC/PC	3.99
PCS/MIN	15

SUM OF MAN/HRS/100 PCS 28.56 2.355

(21)

PTO-004224

**PRE-COOKED IN THE BAG KRETCHMAR WA HONEY**

<b>PRE-COOKED WEIGHT</b>	<b>POST-COOKED WEIGHT</b>
13.88	14.36
13.69	13.52
14.59	13.82
14.01	13.94
13.89	14
14.53	13.8
13.93	13.34
14.34	13.59
14.52	13.79
13.65	13.71
14.28	13.65
14.48	13.35
14.11	13.76
14.16	14.08
14.06	14.48
13.78	14
13.63	14.31
13.99	12.94
13.91	14.19
14.2	14.55
14.09	13.85
14.03	14.03
14.06	14.51
13.83	13.95
14.09	13.92
13.95	14.61
13.97	14.54
13.76	13.71
13.82	13.94
13.75	14.06
14.47	14.13
13.92	14.13
13.71	14.01
13.92	13.91
13.85	14.34
13.99	13.8
14.35	13.85

<b>519.19</b>	<b>516.47</b>	<b>99.48%</b>
---------------	---------------	---------------

Aug Ave weight 14.03 13.96

KRETCHMAR HONEY HAM YIELD STUDY - TEST A

5/11/99

GREEN WEIGHT ESTIMATED	
	10815

VAT WEIGHTS TO STUFF - 5/11/99		
	ACTUAL TICKET #	LBS
	LBS*	PIECES
	46563	2473
	46564	1760
	46565	2612
	46566	2484
	46567	2382
	46568	2615
	46570	2382
PARTIAL	46571	1607
	TOTAL	18215
	AVERAGE PIECE WEIGHT	14.6
		10815

PACKAGING WEIGHTS	
PIECES	LBS
	6813.4
	316
	8818.4
1PC reheat	11.2
1PC	11.4
	1248
	13568.4



\*ACTUAL LBS ARE FROM VANILLA TICKET WHICH IS AFTER MASSAGE

PACKAGING WEIGHTS	
PIECES	LBS
	6813.4
	316
	8818.4
1PC reheat	11.2
1PC	11.4
	1248
	13568.4

TREE WEIGHTS TO SMOKE - 5/12/99		
	TREE #	PIECES
	1	80
	2	80
	3	80
	4	80
	5	80
	6	80
	7	80
	8	80
	9	80
	10	80
	11	80
	12	80
	13	80
	14	80
	15	80
	16	48
	TOTAL	1248
		17081

SMOKED WEIGHT TO PACK - 5/13/99	
TREE #	PIECES
1	80
2	80
3	80
4	80
5	80
6	80
7	80
8	80
9	80
10	80
11	80
12	80
13	80
14	80
15	80
16	48
	TOTAL
	1248
	13906

AVERAGE PIECE WEIGHT	
YIELD TO SMOKE	93.73%
	11.1
	76.31%

TOTAL PACKAGED WEIGHT	13568.4
AVERAGE PIECE WEIGHT	10.87
YIELD FROM STUFF TO PACK	74.46%

KRETCHMAR HONEY HAM YIELD STUDY - TEST B

5/17/99

VAT WEIGHTS TO STUFF - 6/13/99			
GREEN WEIGHT	TICKET #	LBS	ACTUAL LBS* PIECES
1536	32204	2685	2242
936	32205	1624	1943
1523	32206	2643	2271
1417	32207	2460	2116
1449	32208	2514	2272
1374	32209	2385	885
1410	32210	2446	1284
			1272
			2284
<b>9645</b>	<b>TOTAL</b>	<b>16737</b>	<b>16559</b>
			<b>1180</b>

AVERAGE PIECE WEIGHT

**14.0**

\*ACTUAL LBS ARE FROM VANILLA TICKET WHICH IS AFTER MASSAGE

PACKAGING WEIGHTS

PIECES      LBS

1168      11853.1

?      12      122.8 estimated weight

TOTAL      1180      12076.9

TREE WEIGHTS TO SMOKE - 6/14/99			
PUMP/ STUFF LBS		PIECES	TREE #
80		1058	1
80		1065	2
80		1063	3
80		1066	4
70		924	5
70		923	6
70		938	7
70		938	8
70		938	9
70		951	10
80		1101	11
80		1079	12
80		1072	13
80		1055	14
80		921	15
80		524	16
40		16	413
		<b>TOTAL</b>	<b>1180</b>
			<b>16616</b>
			<b>TOTAL</b>
			<b>12323</b>

AVERAGE PIECE WEIGHT

YIELD TO SMOKE

**13.2**

AVERAGE PIECE WEIGHT

YIELD FROM STUFF

**10.4**

94.30%

74.42%

SMOKED WEIGHT TO PACK - 5/17/99	
TREE #	PIECES
1	80

Estimated weight

TOTAL PACKAGED WEIGHT

**12076.9**

AVERAGE PC WEIGHT

**10.2**

YIELD FROM STUFF TO PACK

**72.83%**

MANNING FOR VIRGINIA STYLE HAMS

**LABOR SAVINGS**

CURRENT	DEFORM	PEELING	PACKAGING	TOTAL			
	LAYUP DEFORM RACK WASH MULE	2 2 1 2 2	LAYUP PEEL HANG SCALE MULE	1 2 2 0.33 0.33	LAYUP BAG CRY-O-VAC LABEL MAKE/PACK BOX PALLETIZE	1.67 1 1 1 2 1	
		9		5.66		7.67	22.33
PCS/HR		818		940		903	
PCS/MAN/HR		91		166		118	
HRS/100 PCS		1.100		0.602		0.849	2.552

**PROPOSED**

			DEFORM	1	
			PEEL	1	
			BAG & COV	1	
			LABEL & BOX	1	
			MAKE BOX & PALLETIZE	1	
			MULE	1	
PCS/HR				6	6
PCS/MAN/HR					384
HRS/100 PCS					64
					1.563

	PRESENT	PROPOSED
ANNUAL VOLUME (LBS)	5,600,000	5,600,000
PIECE WEIGHT	10.5	11.55
HRS/100/PCS	2.552	1.563
LABOR RATE	\$15.69	\$15.69
TOTAL LABOR COST	\$213,532	\$118,864

20/26 mkt	55.00	$132.13 \times 85\% = 112.31$
+ 4.00 gross	59.00	$56.00 \times 15\% = 8.40$
- 11.00 credits		$\underline{120.71}$
48.00 $\div 47\% = 102.13$		$\div 13\% \text{ To pump} -$
		$= 86.84$
	.30 cushion	$\div 78\% 50\% \text{ shrink -yf}$
		$\underline{110.62 \text{ YM C}}$
	132.13	

86.84  
 $\div 84.50\% \text{ shrink -yf}$   
 $\underline{102.77 \text{ YM C}}$

91.45  
 $\div 94\% = 97.28$

$16\% \text{ shrink} = \underline{(7.85)}$

\* 440.865

48% picks  
 15% Lunker  
 3% der/rou  
 7.5% Honey

7% 10.226930

\* 574.357

1000	48%	1000	32%
480		320	
150	10.30	150	4.70
(30)		30	
(75)	12.55	75	
1735		1575	

3/14/00

8290

Smoke drencher belt set at slowest setting

Unitherm set at 21.53 Hz EXIT ENTRANCE

533	648	ACTUAL
650	650	SET POINT

Exhaust fans off (slower speed)

in Fire Res Cabinets

speed 33 fast Drive Full Power

Steam Cabinet

speed -4 steam - last ~~valve~~ off

18° cored set so steam not coming out  
into room

The other 3 valves were opened approx 7/3rd.

The thermometers were running at 184, 184, 186

timed gears at 5.5 / min.

3122 cc: Stuart

Wan

Tes

Brian

Do not deviate from 40° rule - Product  
is to be below 0 40° prior to unitherming

Chz

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U-06935

PTO-004241

T mpRecord for Windows v3.16

Summary

Data Source	:	logger			
Logger Type	:	multi-trip			
Serial Number	:	M0028405			
Logger Status	:	logging			
Sample Period	:	00:10:00 (6.0 / hour)			
Date Printed	:	Tuesday, March 14, 2000 9:45:33 PM			
Samples in Logger	:	73			
Started	:	Tuesday, March 14, 2000 9:38:36 AM			
First Sample	:	Tuesday, March 14, 2000 9:38:36 AM			
Last Sample	:	Tuesday, March 14, 2000 9:38:36 PM			
Start with Button	:	OFF	Allow Markers	:	OFF
Stop with Button	:	OFF	Loop Overwrite	:	OFF
Start with Switcher	:	ON	Safe Range Entry	:	OFF
Stop with Switcher	:	ON	Limit Delay	:	1
Upper Limit	:	165.00 F (not exceeded)			
Lower Limit	:	19.99 F (not exceeded)			
Total Samples	:	2,380	Logger Version	:	2.01
Total Uses	:	31	Memory	:	8k
Sensor	:	standard			

Item Number:	:	8290
Stuff Lot:	:	R&D Test post unitherm
Cook Lot:	:	with steam tunnel
Date:	:	
Rack Number:	:	
Temp Recorder:	:	Probe 19
Takedown Number:	:	-
Oven Number:	:	
	:	

Values in Window  
(Samples 1 to 73, units = F)

Tuesday, March 14, 2000

09:38:36	32.99	32.79	32.76	32.76	32.76	32.76
10:38:36	32.76	32.76	32.79	32.79	32.81	32.83
11:38:36	32.85	32.85	33.04	32.95	32.95	38.03
12:38:36	40.41	45.19	50.58	55.38	59.47	62.46
13:38:36	64.72	66.07	66.70	66.90	66.67	66.16
14:38:36	65.37	64.49	63.52	62.47	61.48	60.46
15:38:36	59.34	58.32	57.34	56.41	55.53	54.72
16:38:36	53.91	53.19	52.48	51.75	51.04	50.47
17:38:36	49.84	49.23	48.63	48.07	47.50	46.94
18:38:36	46.42	45.90	45.43	44.98	44.51	44.08
19:38:36	43.68	43.27	42.87	42.53	42.17	41.85
20:38:36	41.52	41.25	40.96	40.69	40.46	40.23
21:38:36	39.83					

Chilled in Cooler (35°)

Ambient Temperature

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U-06936

PTO-004242

T mpRecord for Wind ws v3.16

Summary

Data Source	:	logger			
Logger Type	:	multi-trip			
Serial Number	:	M0028413			
Logger Status	:	logging			
Sample Period	:	00:10:00 (6.0 / hour)			
Date Printed	:	Tuesday, March 14, 2000 9:47:01 PM			
Samples in Logger	:	73			
Started	:	Tuesday, March 14, 2000 9:38:26 AM			
First Sample	:	Tuesday, March 14, 2000 9:38:26 AM			
Last Sample	:	Tuesday, March 14, 2000 9:38:26 PM			
Start with Button	:	OFF	Allow Markers	:	OFF
Stop with Button	:	OFF	Loop Overwrite	:	OFF
Start with Switcher	:	ON	Safe Range Entry	:	OFF
Stop with Switcher	:	ON	Limit Delay	:	1
Upper Limit	:	129.99 F (not exceeded)			
Lower Limit	:	45.00 F (exceeded)			
Total Samples	:	4,949	Logger Version	:	2.01
Total Uses	:	64	Memory	:	8k
Sensor	:	standard			

Item Number:	:	8290
Stuff Lot:	:	R & D Pst unitherm
Cook Lot:	:	with steam tunnel
Date:	:	
Rack Number:	:	
Temp Recorder:	:	Probe 52
Takedown Number:	:	
Oven Number:	:	
:	:	

Values in Window  
(Samples 1 to 73, units = F)

Tuesday, March 14, 2000						
09:38:26	32.86	32.74	32.70	32.70	32.72	32.76
10:38:26	32.79	32.81	36.72	39.97	44.40	48.72
11:38:26	52.32	55.04	57.00	58.14	58.64	58.73
12:38:26	58.44	58.05	57.40	56.77	56.07	55.27
13:38:26	54.48	53.73	52.95	52.23	51.51	50.86
14:38:26	50.22	49.55	48.96	48.42	47.84	47.34
15:38:26	46.85	46.36	45.90	45.50	45.16	44.78
16:38:26	44.44	44.10	43.77	43.48	43.16	42.87
17:38:26	42.60	42.31	42.04	41.77	41.47	41.18
18:38:26	40.89	40.62	40.37	40.12	39.87	39.63
19:38:26	39.40	39.18	39.00	38.82	38.64	38.50
20:38:26	38.30	38.16	38.03	37.87	37.76	37.65
21:38:26	37.40					

Chilled in cooler (35°F)  
ambient temperature

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Restricted Access  
U-06937

PTO-004243